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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,166	07/30/2001	Terence J. Murphy	TI-33108	7266
23494	7590	10/30/2003	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			GONZALEZ, JULIO C	
			ART UNIT	PAPER NUMBER
			2834	
DATE MAILED: 10/30/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,166

Applicant(s)

MURPHY, TERENCE J.

Examiner

Julio C. Gonzalez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-42 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 19-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3, 21, 29 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3, 21, 29 and 37 disclose a plurality of resistance “selectively” connected. How are the plurality of resistance selectively connected?
How are the MOSFET devices acting as resistances?

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6-8, 19, 24-27, 32-35 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fontanella et al, Hanks et al and Murray et al.

Fontanella et al discloses a piezo element C_{pzt} that may be driven in a charge mode (see abstract & figure 2) and a circuitry outputting a signal to the piezo element.

However, Fontanella et al does not disclose that the piezo element may be driven in voltage mode or charge mode.

On the other hand Hanks et al discloses for the purpose of detecting if a piezoelectric device is functional, thus reducing the number of malfunctions in a device that a piezoelectric element may be driven in a voltage mode (see figure 4) or charge mode (see figure 5).

However, neither Fontanella et al nor Hanks et al disclose implicitly that a feedback signal may be used in conjunction with a piezo device.

On the other hand, Murray et al discloses for the purpose of avoiding unwanted energy absorption that a feedback signal is directly link with a piezo element (see figures 4, 2, 1. Moreover, it is disclose that the impedance is related to the voltage of the circuit (column 11, lines 18-26).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design an integrated circuit as disclosed by Fontanella et

al and to modify the invention by using a piezo element that may be driven in a charge or voltage mode for the purpose of detecting if a piezoelectric device is functional, thus reducing the number of malfunctions in a device and to use a feedback and impedance of a circuit for the purpose of avoiding unwanted energy absorption as disclosed by Murray et al.

5. Claims 2, 3, 5, 20, 21, 23, 28, 29, 31, 36, 37 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fontanella et al, Hanks et al and Murray et al as applied to claims 1, 19, 27 and 35 above, and further in view of Sullivan.

The combined circuit with a piezo element discloses all of the elements above. However, the combined circuit with a piezo element does not disclose implicitly a circuit for adjusting an output impedance.

On the other hand, Sullivan discloses for the purpose of controlling a resonant frequency in an improved manner, a piezo element 24, a circuit 14 that has means 22 for adjusting an output impedance (see figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined integrated circuit as disclosed above and to modify the invention by adjusting the output impedance of a circuit for the purpose of controlling a resonant frequency in an improved manner as disclosed by Sullivan.

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6. Claims 4, 22, 30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fontanella et al, Hanks et al and Murray and Sullivan as applied to claims 3, 21, 29 and 37 above, and further in view of Liu et al.

The combined circuit with a piezo element discloses all of the elements above. However, the combined circuit with a piezo element does not disclose having a plurality of mosfets connected in series.

On the other hand, Liu et al discloses for the purpose of controlling accurately the resistance in a circuit that mosfets may be connected in series (see figures 3a, 3b, 4a).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined integrated circuit as disclosed above and to modify the invention by connecting mosfets in series for the purpose of controlling accurately the resistance in a circuit as disclosed by Liu et al.

Response to Arguments

7. Applicant's arguments filed 07/14/03 have been fully considered but they are not persuasive.

As disclosed in the claims, a circuit may operate a piezo element in either a voltage mode or charge mode. The claims do not specify how the circuit may differentiate or what the piezo element may do to perform in a voltage or charge mode. As such, Fontanella discloses a piezo element C_{pz} , which may be driven in a charge mode and a circuit is used (see figure 2). Moreover, Hanks teaches that it is possible to drive a piezo element in combination with a circuit in a charge or voltage mode (figures 4, 5). It would have been helpful for the claims to stand out from the prior art if the uniqueness, that is, the charge and voltage mode, would have been somehow incorporated in the body of the claim or defining what a charge and voltage mode pertains to the present invention in order to differentiate from the prior art or how the switching between the modes is done and how it affects the circuitry.

8. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge

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which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

9. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, all the base references, Fontanella, Hanks et al and Murray et al deal in the field of piezo elements and actuators.

10. In response to applicant's arguments, the recitation milli-actuator or mass storage device has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure,

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and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., avoiding unwanted energy absorption and a class AB amplifier connected to receive the output from the class A amplifier) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

12. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened

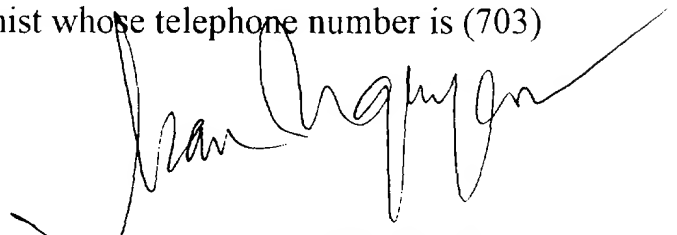
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statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



TRAN NGUYEN
PRIMARY EXAMINER

Jcg

October 20, 2003